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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,525	07/24/2003	Sang Seok Lee	8733.871.00-US	8162
30827	7590	11/02/2006	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			SCHATZ, CHRISTOPHER	
1900 K STREET, NW			ART UNIT	
WASHINGTON, DC 20006			PAPER NUMBER	

1733

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/625,525

Applicant(s)

LEE ET AL.

Examiner

Christopher T. Schatz

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 20 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14-19 is/are rejected.
- 7) ☒ Claim(s) 12 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 does not further limit claim 7 because claim 1 already requires at least two elastic members between the upper stage and upper chamber unit and at least two elastic members between the lower chamber unit and the lower stage. Claim 6 is actually broader than claim 1 because claim 6 requires at least *one* elastic member between the upper stage and upper chamber unit and at least *one* elastic member between the lower chamber unit and the lower stage. Claim 1 requires *more than one* elastic member between the upper stage and upper chamber unit and *more than one* elastic member between the lower chamber unit and the lower stage. It appears to examiner that applicant intended to cancel claims 6 and 7 place the limitations of claim 7 in claim 1. However, because applicant has not actually cancelled claims 6 and 7, applicant's intent is unclear to the examiner. Clarification is respectfully required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1733

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satoshi et al. (JP 2000-284295) in view of Machida et al. '578, and optionally Cram '132.

Satoshi et al. discloses a substrate bonding apparatus for manufacturing a liquid crystal display device comprising a base frame 3; a lower chamber unit 10 mounted to the base frame (paragraph 0013); an upper chamber unit 21 joinable to the lower chamber unit; an upper stage S1 fixed to the upper chamber unit 21 for securing a first substrate 1b; a lower stage T1 fixed to the lower chamber unit for securing a second substrate 1a. The reference is silent as to the presence of elastic members.

Machida et al. discloses a substrate bonding apparatus capable of manufacturing a liquid crystal display device (column 6, lines 45-49) comprising lower and upper parts of chamber 101 and a lower stage 102a for securing a second substrate, and a plurality of elastic members 108 between the lower portion of the chamber and the lower stage (figure 1). The presence of elastic members between the stage and the chamber is advantageous because, as disclosed by Machida et al., said members create an apparatus capable of applying uniform pressure when pressure is applied to the substrate 103. Such uniform pressure application, when employed in the apparatus of Satoshi, would create an apparatus capable of forming a level, even bond between the two substrates. Although Machida et al. is silent as to the presence of elastic members on the upper part of the apparatus, one of ordinary skill in the art would have readily understood that placement of the elastic members 108 between both the upper chamber and upper stage and lower chamber and lower stage of Satoshi et al. respectively, would maximize the ability of

Art Unit: 1733

Satoshi's apparatus to apply uniform pressure during bonding, thus creating an apparatus capable of producing a high quality of the bond. Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to arrange a plurality of elastic members between an upper stage and an upper chamber unit and a lower stage and a lower chamber unit respectively as taught by Machida et al. above in the apparatus for manufacturing a liquid crystal display as set forth above by Satoshi et al.

Alternatively, Cram discloses an apparatus capable of manufacturing a liquid crystal display comprising upper and lower chamber units, an upper stage and a lower stage for securing respective substrates, and a plurality of elastic members arranged between the upper and lower chamber units and the upper and lower stages, respectively (see figure). Arranging elastic members between the between the upper and lower chamber units and the upper and lower stages is advantageous because, as disclosed by Cram, said members provide for proper sealing of the chamber unit during bonding (column 2, lines 63-66). Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to arrange the elastic members disclosed Cram between the upper and lower chamber units and the upper and lower stages of Satoshi et al.

As to claim 2, Satoshi et al. discloses a substrate bonding apparatus capable of manufacturing a liquid crystal display device wherein the upper and lower chamber units are capable of being convexly bendable (paragraph 0019). Applicant should note that although neither reference explicitly states that the elastic members 108 exert restoration forces on the upper and lower chambers units, the nature of elasticity would have lead one of ordinary skill in the art to understand that elastic members placed between an upper stage and an upper chamber

Art Unit: 1733

unit and a lower stage and a lower chamber unit respectively, would have been capable of exerting restoration forces to the upper and lower chamber units. As to claim 3, Machida et al. discloses a substrate bonding apparatus capable of manufacturing a liquid crystal display device wherein the plurality of elastic members include a coil spring (figure 1). As to claims 4 and 5, examiner acknowledges that there is not explicit disclosure of a conical or plate spring. However, examiner asserts the use of all three springs is well known. Absent any unexpected result specific to the instant invention one of ordinary skill in the art would have readily recognized to use an initially shaped-conical spring or a plate spring in place of a coil spring. As to claim 8, Satoshi et al. discloses a substrate bonding apparatus capable of manufacturing a liquid crystal display device wherein at least one of the upper and lower stages includes: a fixing plate 27 coupled to a corresponding one of the upper and lower chamber units; and a securing plate 28 for securing a corresponding one of the first and second substrates (figure 1). As to claims 9 and 10, examiner asserts that because Machida et al. discloses that the plurality of elastic members are between the stage and the chamber unit (figure 1), and the fixing plate 102b of Machida et al. is further from the stage than from the chamber unit, it would have been obvious to one of ordinary skill in the art to arrange the elastic members disclosed by Machida et al. between the fixing plate and the upper chamber unit and the fixing plate and the lower chamber unit of Satoshi et al. As to claim 11, examiner asserts that one of ordinary skill in the art would have understood to place the elastic members between the fixing plate and the securing plate because doing so would aid in applying even pressure during the bonding process. As to claim 14, Satoshi et al. discloses a substrate bonding apparatus capable of manufacturing a liquid crystal display device wherein the securing plate includes a plurality of electrostatic chucks (paragraph 0021). As to claim 15, one

Art Unit: 1733

of ordinary skill in the art would have been motivated to place the elastic members in correspondence with the plurality of electrostatic chucks such that that substrate is held in parallel manner to a second substrate during the chucking process. As to claim 19, examiner addressed above why one of ordinary skill in the would have been motivated to place the elastic members 108 of Machida et al. between the upper chamber unit and the upper stage of Satoshi et al. As to claim 20, Machida et al. discloses the plurality of elastic members arranged between a lower chamber section and a lower stage as discussed above.

6. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satoshi et al. and Machida et al. as applied above, and in further view of Kubota et al. '053 for the same reasons as set forth in section 6 of the office action dated November 15, 2005.

### *Response to Arguments*

Applicant's arguments filed August 22, 2006 have been fully considered but they are not persuasive. Applicant is respectfully notified that it is not the position of the examiner that the holder 104 of Machida directly corresponds to the lower stage recited by applicant's independent claim. The position of the examiner is that Machida teaches that using elastic members 108 has beneficial effects when bonding two substrates together, and that one of ordinary skill in the art would have readily recognized that such beneficial effects are applicable to the apparatus of Satoshi and thus been motivated to include elastic members in the apparatus of Satoshi. Applicant's stated differences between the claimed apparatus and the apparatus of Machida does not render the current combination unobvious because Machida et al. does not teach away from using the lower chamber unit disclosed by Satoshi. Applicant is notified that Satoshi does

Art Unit: 1733

disclose a lower chamber unit that is structurally identical to applicant's claimed lower chamber unit.

*Allowable Subject Matter*

Claims 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not disclose an apparatus wherein at least one elastic member is arranged between a fixing plate and an upper chamber unit nor does the prior art disclose an apparatus wherein at least one elastic member is arranged between a fixing plate and a lower chamber unit. Additionally, nothing in the prior art would motivate one of ordinary skill in the art to place an elastic member between an upper or lower chamber unit and a fixing plate.

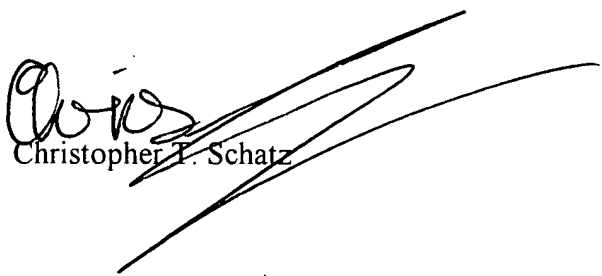
*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Christopher T. Schatz** whose telephone number is **571-272-1456**. The examiner can normally be reached on 8:00-5:30, Monday -Friday.

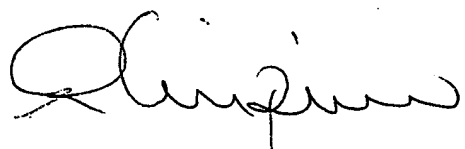
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1733

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Christopher T. Schatz



**RICHARD CRISPINO**  
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